

REMARKS

Applicant expresses appreciation to the Examiner for consideration of the subject patent application. This amendment is in response to the Office Action mailed May 4, 2004. Claims 1-29 were rejected. The claims have been amended to address the concerns raised by the Examiner.

Claims 1-25 and 30 remain in the application. Claims 1-26 were originally presented, while claims 27-29 were added by preliminary amendment. Claims 26-29 have been canceled without prejudice. New claim 30 has been added. Support for new claim 30 is found in claims 1-3 and FIGs. 21-29. Claims 1, 4, 6, 11, 18 and 25 have been amended.

Double Patenting

Claims 8 and 27-29 stand provisionally rejected under § 101 (statutory "same invention" type double patenting) as claiming the same invention as that of claims 10 and 29-31 of copending Application No. 10/606,855. Claims 27-29 have been canceled. Applicant notes that claim 8 in the present application depends from independent claim 1, which differs significantly from claim 10 of the other application. Namely, claim 10 of the other application does not include the limitation of "a single pair of fingers, associated with another of the trays, with only two fingers pivotally positioned on opposite sides of the pivot axle and on opposite sides of the shoulder and separated by both the axle and the shoulder so that a single finger is disposed on each side of the shoulder." Therefore, Applicant respectfully submits that claim 8 of the present application is patentably distinct from claim 10 of the copending application and urges the Examiner to withdraw the rejection.

Claim Rejections - 35 U.S.C. § 102

Claims 1, 2, 4-7, 11-18 and 26 (including independent claims 1, 11 and 18) were rejected under 35 U.S.C. § 102(b) as being anticipated by Garland. Claims 1-7 were rejected under 35 U.S.C. § 102(b) as being anticipated by Richardson. Claims 11-13, 16-20 and 23-25 (including independent claims 11, 18 and 25) were rejected under 35 U.S.C. § 102(b) as being anticipated by Walter. Applicant respectfully traverses this rejection for the reasons set forth below.

In order to most succinctly explain why the claims presented herein are allowable, Applicant will direct the following remarks primarily to the originally presented independent claims 1, 11, 18 and 25 with the understanding that once an independent claim is allowable, all claims depending therefrom are allowable.

The Garland, Richardson and Walter references fail to disclose a single pair of fingers with only two fingers disposed on opposite sides of both a pivot axle and a shoulder. The Garland and Richardson references disclose two pair of fingers so that there are four fingers, with each finger opposing another finger across both the axle and the shoulder. The Walter reference fails to disclose any finger or any axle.

In contrast, independent claim 1 sets forth:

"a single pair of fingers, associated with another of the trays, with only two fingers pivotally positioned on opposite sides of the pivot axle and on opposite sides of the shoulder and separated by both the axle and the shoulder so that a single finger is disposed on each side of the shoulder." (emphasis added)

Independent claim 11 sets forth:

"pivoting the lower and upper trays about a hinge ... with a single pair of fingers with only two fingers movably disposed on opposite sides of the axle and on opposite sides of the shoulder, the single pair of fingers slidably gripping both the axle and the shoulder as the lower and upper trays pivot about the hinge." (emphasis added)

Independent claim 18 sets forth:

"pivoting the upper and the lower trays about at least one hinge ... with a single pair of fingers with only two fingers movably disposed on opposite sides of the axle and on opposite sides of the shoulder, the single pair of fingers slidably gripping both the axle and the shoulder as the lower and upper trays pivot about the hinge." (emphasis added)

Independent claim 25 sets forth:

"obtaining a dental articulator with upper and lower trays pivotally coupled together by at least one hinge ... with a single pair of fingers with only two fingers movably disposed on opposite sides of the axle and on opposite sides of the shoulder, the single pair of fingers slidably gripping both the axle and the shoulder as the lower and upper trays pivot about the hinge." (emphasis added)

The elements of a single pair of fingers with a single finger on each side of the shoulder are not taught in the cited references, and provide the advantage of ease of manufacture by injection molding techniques.

Therefore, Applicant respectfully submits that independent claims 1, 11, 18 and 25, and dependent claims 2-7, 12-17, 19, 20, 23 and 24, are allowable over the prior art references as cited, and urges the Examiner to withdraw the rejection.

Claims 27-29 were rejected under 35 U.S.C. § 102(b) as being anticipated by Whelan. Claims 27-29 have been canceled without prejudice.

Claim Rejections - 35 U.S.C. § 103

Claims 1-7, 9, 10 and 26 were rejected under 35 U.S.C. § 103 as being unpatentable over Walter in view of Garland. Claim 26 has been canceled without prejudice. Applicant respectfully traverses the rejection with respect to the remaining claims for the reasons set forth below.

The Walter reference fails to teach or suggest an axle or a single pair of fingers. The Garland reference does not overcome this deficiency in the Walter reference, and clearly teaches away from the present invention. As described above, the Garland reference clearly teaches two pair of fingers, or four fingers, so that the fingers surround the axle and the shoulder, and each finger opposes another finger across both the axle and the shoulder.

In contrast, independent claim 1 sets forth:

"a single pair of fingers, associated with another of the trays, with only two fingers pivotally positioned on opposite sides of the pivot axle and on opposite sides of the shoulder and separated by both the axle and the shoulder so that a single finger is disposed on each side of the shoulder." (emphasis added)

As discussed above, the claimed configuration is believed to facilitate manufacture, while the configuration of Garland is believed to hinder manufacture. Therefore, Applicant respectfully submits that independent claim 1, and dependent claims 2-7, 9 and 10, are allowable, and urges the Examiner to withdraw the rejection.

Claim 8 was rejected under 35 U.S.C. § 103 as being unpatentable over Walter in view of Garland and further in view of Presswood. Claims 14, 15, 21 and 22 were rejected under 35 U.S.C. § 103 as being unpatentable over Walter in view of Presswood. Applicant respectfully submits that dependent claims 8, 14, 15, 21 and 22 are dependent upon allowable dependent claims, and are therefore allowable.

CONCLUSION

In light of the above, Applicant respectfully submits that pending claims 1-25 and 30 are in condition for allowance. Therefore, Applicant requests that the rejections and objections be withdrawn, and that the claims be allowed and passed to issue. If any impediment to the allowance of these claims remains after entry of this Amendment, the Examiner is strongly encouraged to call Garron M. Hobson at (801) 566-6633 so that such matters may be resolved as expeditiously as possible.

One independent claim was added (claim 30), while four claims were canceled (claims 26-29), including three independent claims (claims 26, 27 and 29). Therefore, no additional fee is due.

The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this Amendment to Deposit Account No. 20-0100.

DATED this 4th day of August, 2004.

Respectfully submitted,



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Amendments to Specification – Marked-up version to show changes

Changes to the paragraph beginning on page 1, line 16, are as follows:

One method of making a dental model is referred to as the “Double Pour Method” or “~~dry pinning technique~~ pinindex method.” In this method, ~~the model is poured, allowed to harden, separated and trimmed~~ once the model is poured and allowed time to dry, it is separated and trimmed; then holes are placed in the lower surface of the cast followed by inserting the pin with glue and placing the cast into second-pour stone base. The disadvantages of this process include: time consuming, troublesome dowel pin setup, and ~~multiple~~ the requirement for two pours of casting material to create a base and a die. Moreover, this method often involves guesswork, since this method requires the technician to hand occlude two separate casts manually to set the bite. ~~As a result, it is not always possible to relate the mandibular and maxillary casts with one another in such a way as to reproduce an accurate three dimensional model showing the bites as they were provided by the dentist at the time the negative impression was made.~~ This guesswork will occasionally result in an inaccurate reproduction of the occlusal relationship of the mandibular and maxillary casts. This inaccurate reproduction will not match the original bites provided by the dentist at the time the negative impression was taken. An example of this method can be found in U.S. Pat. 4,734,033. This method can use a separate hinge that is separately attached to the stone bases or models. The hinge can include an adjustable ball-and-socket type connection that is rigidly fixed after the stone bases or models are aligned.

Changes to the paragraph beginning on page 1, line 29, are as follows:

Another method is referred to as the “Single Pour Method” or “~~wet pinning technique~~ method.” In this method, a plastic tray support member replaces the stone base mentioned above, so the second pour stage is eliminated. As a result, the whole process of making a dental model can be considerably shortened. Moreover, it is possible to mount the case without separating the upper and lower cast from the impression so that the case is mounted with the bite exactly as the impression is provided by the dentist. This “Single Pour Method” or “wet pinning technique” can include two types. The first type is the “open cavity tray type” that 1) can stabilize the prosthesis element being worked on, without shifting, or prevent movement of the prosthesis dies with the help of a notched or arcuate cavity wall which is relatively high; and 2) can eliminate the

additional labor of registration pin hole drilling and the pindexing process. The disadvantages of this process include: 1) it can be difficult to control the dies over the entire process of die preparation, wax up, metal finish and porcelain build-up because there is no pin attached at the bottom of the prosthesis dies to hold to work with; 2) initial removal of the entire die from the tray can be difficult because the tray has comparatively high and notched walls necessitating the use of an extra accessory, like a special releasing device, a stand, a mallet etc., and part of the cast can break while being released from the tray; and 3) the initial stage of the wet porcelain build up can be broken because the dies can be seated firmly by a rail or spine that snap fits or clicks into the tray. Examples of such methods can be found in U.S. Patents 5,306,145 and 6,099,305.

Changes to the paragraph beginning on page 12, line 33, are as follows:

While the above has described devices and methods suited for quadrant impression modeling, similar devices and methods can be configured for full-arch impression modeling, as shown in FIGs 30a-c. All the characteristics found in quadrant upper tray 11 and lower tray 12 are reflected in a full-arch tray 90. The full-arch tray 90 can include upper and lower tray support members that are U-shaped to accept impression molds of the patient's entire mouth. The U-shaped tray 90 can be open through a middle of the U-shape, and can have an inner circumferential wall that is flat or straight from a bottom to a top, as shown in FIG. 30a and 30b, to facilitate removal of casting material, such as with a spatula while still wet.